These considerations inevitably lead to the conclusion that population dynamics and population genetics are not two independent disciplines but are two closely linked aspects of one discipline, the study of natural populations. A close cooperation between geneticists and ecologists, therefore, is absolutely necessary in further studies of populations of *Cepaea nemoralis* and, for that matter, of any other species.

VII. SUMMARY

1. Some data are presented in this paper on migration, mating and egg production and on mortality of eggs, juveniles and adults in an artificial outdoor population of the polymorphic landsnail *Cepaea nemoralis* (L.). The snails that started this population were collected in four different natural populations.

2. Additional data on egg production have been collected in some outdoor cages.

3. Adult mortality was very high mainly because of thrush predation during spring and during dry periods in summer. The thrushes selected as to colour and banding pattern of the shell and this selection varied in sign and magnitude from one predation period to the other and/or within such a period. Net selection, however, was not statistically different from zero.

4. Unbanded snails had a greater migratory tendency than banded ones. Snails originating from Lobith had a greater migratory tendency than snails from Haren.

5. The composition of the group of adults in the population changed as the percentage of snails originating from Haren increased and the percentage of snails from Lobith decreased. This change can be explained by selective emigration.

6. Mating was random as to colour, banding, size and origin. No differences in mating frequency between different morphs were found but there were such differences between snails of different origin that were positively correlated with similar differences in oviposition frequency. These differences were presumably caused by different circumstances encountered in spring when the snails still lived in their respective natural populations.

7. The number of eggs produced per snail per year was correlated with size and age of the snails and with some climatic factors such as temperature. Larger snails produce more and larger clutches than smaller ones. Young adults produce fewer but larger clutches than do older ones. Clutch size decreases in the course of the season. Clutches

are larger if produced at higher temperatures. Heritability of both oviposition frequency and clutch size under natural circumstances is low.

8. Some environmental factors which influence egg production affect yellow banded snails more than red banded ones. There is a suggestion that unbanded snails are less sensitive to these factors than are banded ones. Sign and magnitude of this selection which operates both through oviposition frequency and clutch size depends on these factors which vary from time to time and, probably, from one population to the other.

9. The rate of development of the eggs has been roughly determined at various temperatures. Mortality of the eggs under natural circumstances is about 50%.

10. Juvenile mortality was very high. Red juveniles had better chances of survival, especially when banded, than yellow ones.

11. The implication of the results obtained for the dynamics and genetics of *Cepaea* populations in general is discussed.

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